

Pine Grove Area

SCHOOL DISTRICT

Science

Food Product Processing

September 18, 2008

I. PHILOSOPHY

The Food Product Processing course of the Pine Grove Area School District has been structured to introduce, systematically and thematically, the basic principles of the meat and food industry. Students will acquire a basic level of understanding in many areas of the food industry, food science, food preservation and meats identification and evaluation. These principles will be addressed using many applications and opportunities for hands-on learning. The course will allow for the accommodation of many learning styles, motivational levels, and academic abilities.

II. CORE CONCEPTS

1. The Food Industry
2. Food Science
3. Food Preservation
4. Meats Identification and Evaluation

III. COURSE OF STUDY

A. Course Name: Food Product Processing

B. Grade Level: 11-12

C. Length of Course: one semester

1. Frequency: daily

2. Duration: 43 minutes

D. Academic Level: Career Technology, Post-Secondary, College Prep

E. Credits: 0.5 Credits

F. Prerequisites: None

G. Course Description:

This course is designed to make students more aware of the latest concepts in food science. Topics to be covered include the food industry, food preservation, food products, food safety, units of measure, meat science, and consumer concerns.

IV. CONTENT: Food Product Processing

CORE CONCEPT 1: The Food Industry

MAJOR OBJECTIVE: Discuss major components of the food industry.

CURRICULUM STANDARD:			
PA State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 4.4.12 A:</p> <p>Analyze the management practices in the agriculture business.</p> <p>Define the components of an agriculture system that would result in a minimal waste of resources.</p> <p>Identify the diversity in crop production and analyze the advantages and disadvantages of such diversity.</p> <p>Analyze the effects of agricultural practices on the economy.</p>	<p>Teacher will guide students to:</p> <p>Identify the areas of the food industry</p> <p>Examine various career opportunities in the field of food science</p> <p>Select and describe a food science career</p> <p>Discuss the role of the food science industry in agriculture</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none"> • Partner/group projects • Individuals during small group work • Individuals during whole group discussion • Oral question and answer • Independent activities • Class participation • Tests and quizzes 	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials</p>

CONTENT: Food Product Processing**CORE CONCEPT 2: Food Science****MAJOR OBJECTIVE: Identify and describe the major components of the food science system.****CURRICULUM STANDARD:**

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 11.3.12 C: Evaluate sources of food and nutrition information.	Teacher will guide students to: Identify various food quality factors and discuss importance to consumers. Examine how food quality factors affect the food industry.	Teacher evaluation of: <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	Textbook resources Computer programs/web sites Notebook Supplemental materials
PA Standard 11.3.12 E: Analyze the breakdown of foods, absorption of nutrients and their conversion to energy by the body.	Teacher will guide students to: Examine the different types of food deterioration. Identify various acids play a role in the deterioration of foods. Discuss the effect food deterioration has on food processing.	Teacher evaluation of: <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	Textbook resources Computer programs/web sites Notebook Supplemental materials

CONTENT: Food Product Processing

CORE CONCEPT 2: Food Science

MAJOR OBJECTIVE: Identify and describe the major components of the food science system.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
PA Standard 11.3.12 G: Analyze the relevance of scientific principles to food processing, preparation and packaging.	Teacher will guide students to: Discuss different methods and identify the various steps of food processing. Compare and contrast the various types of food packaging. Discuss how and why different types of packaging are used for marketing products.	Teacher evaluation of: <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	Textbook resources Computer programs/web sites Notebook Supplemental materials

CONTENT: Food Product Processing

CORE CONCEPT 3: Food Preservation

MAJOR OBJECTIVE: Compare the various forms of food preservation and discuss the importance of each.

CURRICULUM STANDARD:

State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 11.3.12 A:</p> <p>Analyze how food engineering and technology trends will influence the food supply</p>	<p>Teacher will guide students to:</p> <p>Identify the three major forms of food preservation.</p> <p>Describe each method of food preservation and how it is used.</p> <p>Explain why certain food preservation methods are only used on certain foods.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials</p>
<p>PA Standard 11.3.12 E:</p> <p>Analyze the breakdown of foods, absorption of nutrients and their conversion to energy by the body.</p>	<p>Teacher will guide students to:</p> <p>Discuss the effects food deterioration has on humans.</p> <p>Compare and contrast different types of food born illnesses.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials</p>

CONTENT: Food Product Processing

CORE CONCEPT 3: Food Preservation

MAJOR OBJECTIVE: Compare the various forms of food preservation and discuss the importance of each.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 11.3.12 G:</p> <p>Analyze the relevance of scientific principles to food processing, preparation and packaging.</p>	<p>Teacher will guide students to:</p> <p>Discuss the importance of food preservation methods in relation to food packaging and processing.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials</p>
<p>PA Standard 4.4.12 D:</p> <p>Analyze research and development activities as they relate to agriculture.</p> <p>Analyze the role of research, development and technology as it relates to the food and fiber system.</p>	<p>Teacher will guide students to:</p> <p>Discuss the role of technology in the food preservation.</p> <p>Explain how food preservation methods have evolved through the use of technology.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials</p>

CONTENT: Food Product Processing

CORE CONCEPT 4: Meats Identification and Evaluation

MAJOR OBJECTIVE: Identify and evaluate wholesale and retail cuts of meat.

CURRICULUM STANDARD:			
State Standard/Student Expectation	Specific Content	Assessments	Resources/Materials
<p>PA Standard 4.4.12 B:</p> <p>Describe how agricultural science has influenced biotechnology.</p> <p>Evaluate the use of feed additives in shifting metabolism to increase muscle mass and reduce fat in farm animals.</p>	<p>Teacher will guide students to:</p> <p>Identify various wholesale and retail cuts of meat on the beef and pork carcass.</p> <p>Evaluate the quality of various cuts of meat.</p> <p>Examine the impact of using growth hormones in meat providing animals.</p>	<p>Teacher evaluation of:</p> <ul style="list-style-type: none">• Partner/group projects• Individuals during small group work• Individuals during whole group discussion• Oral question and answer• Independent activities• Class participation• Tests and quizzes	<p>Textbook resources</p> <p>Computer programs/web sites</p> <p>Notebook</p> <p>Supplemental materials</p>

V. EXPECTED LEVELS OF ACHIEVEMENT

A. Students are expected to reach the proficient level (D or above) of achievement, including all of the skills noted in the specific content area of this curriculum.

B. Grading system for Food Product Processing is as follows:

Grading Scale	
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

C. Each student's grade will be determined at the conclusion of each marking. Progress notes will be issued half-way throughout each marking period for students who are performing below 70%.